

FCC TEST REPORT (15.407)

REPORT NO.: RF130801C15-7
MODEL NO.: 0P3P700
FCC ID: NM80P3P700
RECEIVED: Aug. 01, 2013
TESTED: Aug. 15, 2013 ~ Aug. 24, 2013
ISSUED: Aug. 29, 2013

APPLICANT: HTC Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130801C15-7	Original release	Aug. 29, 2013

1. CERTIFICATION

PRODUCT: Smartphone

MODEL NO.: 0P3P700

BRAND: HTC

APPLICANT: HTC Corporation

TESTED: Aug. 15, 2013 ~ Aug. 24, 2013

TEST SAMPLE: PRODUCTION UNIT

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2009

The above equipment (model: 0P3P700) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivonne Wu , **DATE** : Aug. 29, 2013
Ivonne Wu / Senior Specialist

APPROVED BY : Sam Chen , **DATE** : Aug. 29, 2013
Sam Chen / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -1.88dB at 13.55859MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.73dB at 5148.00MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Smartphone
MODEL NO.	0P3P700
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	256QAM, 64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7 802.11ac: up to V9
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	42.560mW for 5180 ~ 5240MHz 44.361mW for 5260 ~ 5320MHz 44.463mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

1. The EUT's accessories list refers to Ext. Pho.
2. The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210MHz

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

FOR 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500MHz	116	5580MHz
104	5520MHz	132	5660MHz
108	5540MHz	136	5680MHz
112	5560MHz	140	5700MHz

3 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	134	5670MHz
110	5550MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
106	5530MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G:** Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180-5240MHz and 5260-5320MHz, and on **Z-plane** for 5500-5700MHz.

RADIATED EMISSION TEST (ABOVE 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

RADIATED EMISSION TEST (BELOW 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	5180-5240	36 to 48	44	OFDM	BPSK	MCS0
802.11a	5260-5320	52 to 64	64	OFDM	BPSK	6.0
	5500-5700	100 to 140	100	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

TEST CONDITION
BT Link + WLAN (5G) Link + NFC Link + Earphone + Adapter

BANDEDGE MEASUREMENT:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	MCS0
802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Harry Hsueh
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Harry Hsueh
PLC	25deg. C, 65%RH	120Vac, 60Hz	Johnson Liao
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

3.3 DESCRIPTION OF SUPPORT UNITS

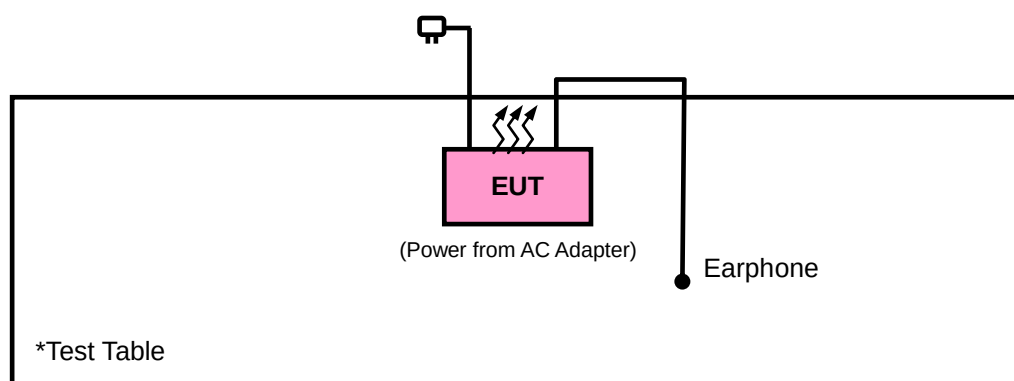
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Merry	Max-300	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.1m audio cable

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 was provided by the manufacturer.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 DUTY CYCLE OF TEST SIGNAL

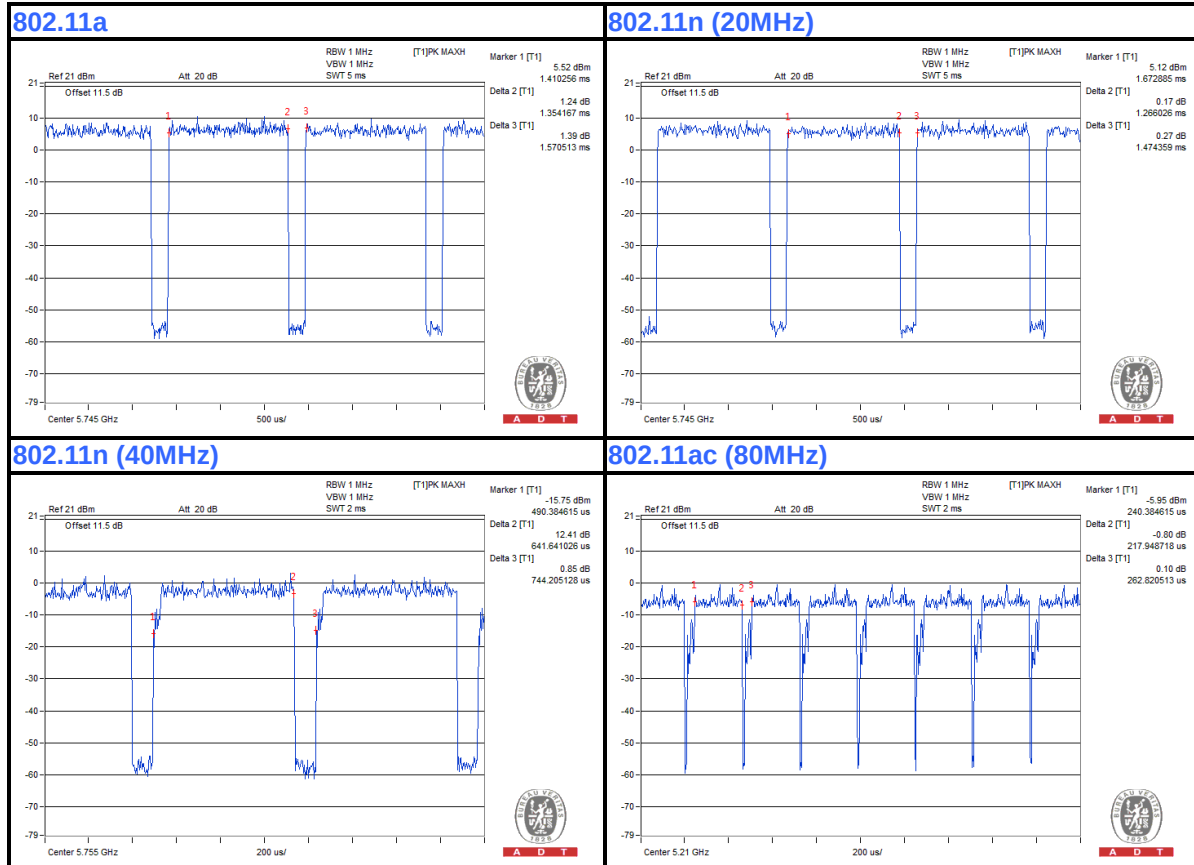
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $1.354/1.571 = 0.862$, Duty factor = $10 * \log(1/0.862) = 0.64$

802.11n (20MHz): Duty cycle = $1.266/1.474 = 0.859$, Duty factor = $10 * \log(1/0.859) = 0.66$

802.11n (40MHz): Duty cycle = $641.641/744.205 = 0.862$, Duty factor = $10 * \log(1/0.862) = 0.64$

802.11ac (80MHz): Duty cycle = $217.949/262.821 = 0.829$, Duty factor = $10 * \log(1/0.829) = 0.81$



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r03

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
√	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000 \sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1012010	Jul. 31, 2013	Jul. 30, 2014
Power Sensor	MA2411B	1315050	Jul. 31, 2013	Jul. 30, 2014

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

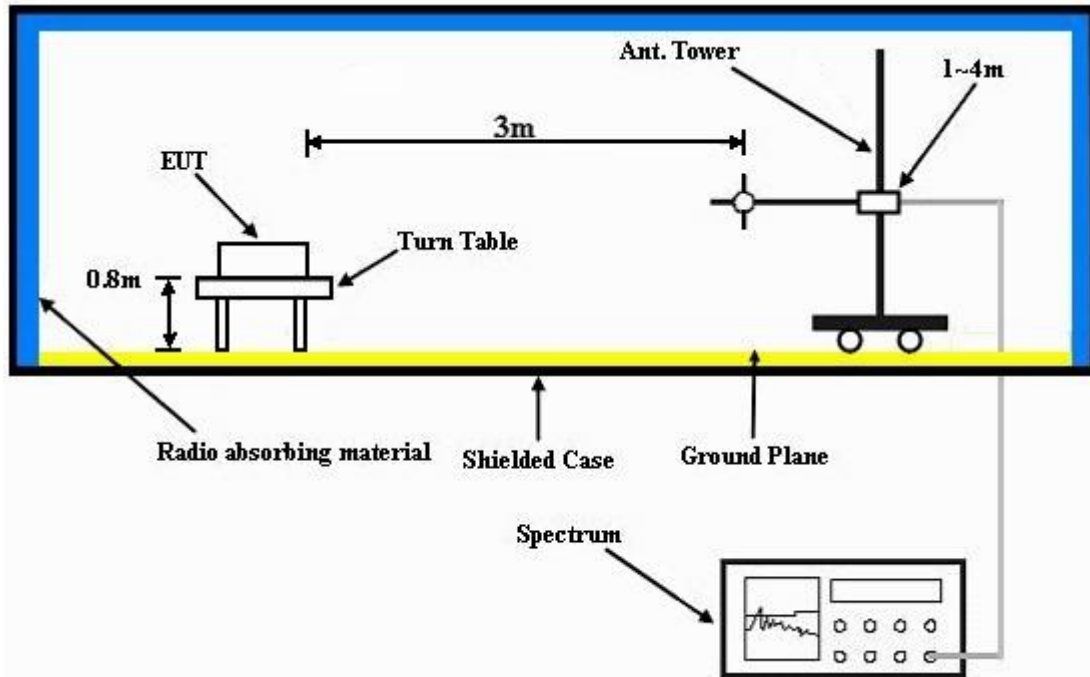
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.7 EUT OPERATING CONDITION

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	47.7	39.11	54	-6.3	34.46	8.13	34	156	71	Average
5150	63.77	55.18	74	-10.23	34.46	8.13	34	156	71	Peak
5180	100.95	92.32			34.47	8.16	34	156	71	Average
5180	108.88	100.25			34.47	8.16	34	156	71	Peak
5452	42.28	33.32	54	-11.72	34.5	8.51	34.05	156	71	Average
5452	63.84	54.88	74	-10.16	34.5	8.51	34.05	156	71	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	47.11	38.52	54	-6.89	34.46	8.13	34	127	351	Average
5148	63.04	54.45	74	-10.96	34.46	8.13	34	127	351	Peak
5180	98.46	89.83			34.47	8.16	34	127	351	Average
5180	106.32	97.69			34.47	8.16	34	127	351	Peak
5370	42.15	33.27	54	-11.85	34.5	8.41	34.03	127	351	Average
5370	61.97	53.09	74	-12.03	34.5	8.41	34.03	127	351	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	42.34	33.75	54	-11.66	34.46	8.13	34	156	71	Average
5146	63.13	54.54	74	-10.87	34.46	8.13	34	156	71	Peak
5220	101.32	92.61			34.49	8.22	34	156	71	Average
5220	108.45	99.74			34.49	8.22	34	156	71	Peak
5418	42	33.1	54	-12	34.5	8.44	34.04	156	71	Average
5418	64.05	55.15	74	-9.95	34.5	8.44	34.04	156	71	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5108	42.41	33.85	54	-11.59	34.45	8.1	33.99	113	351	Average
5108	63.4	54.84	74	-10.6	34.45	8.1	33.99	113	351	Peak
5220	99.02	90.31			34.49	8.22	34	113	351	Average
5220	107.09	98.38			34.49	8.22	34	113	351	Peak
5458	42.02	33.06	54	-11.98	34.5	8.51	34.05	113	351	Average
5458	63.7	54.74	74	-10.3	34.5	8.51	34.05	113	351	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5220MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5098	42.5	33.98	54	-11.5	34.44	8.07	33.99	153	68	Average
5098	63.57	55.05	74	-10.43	34.44	8.07	33.99	153	68	Peak
5240	101.54	92.8			34.49	8.26	34.01	153	68	Average
5240	109.08	100.34			34.49	8.26	34.01	153	68	Peak
5364	42.23	33.38	54	-11.77	34.5	8.38	34.03	153	68	Average
5364	63.42	54.57	74	-10.58	34.5	8.38	34.03	153	68	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5050	42.26	33.82	54	-11.74	34.42	8	33.98	140	353	Average
5050	63	54.56	74	-11	34.42	8	33.98	140	353	Peak
5240	100.2	91.46			34.49	8.26	34.01	140	353	Average
5240	107.33	98.59			34.49	8.26	34.01	140	353	Peak
5418	41.96	33.06	54	-12.04	34.5	8.44	34.04	140	353	Average
5418	64.73	55.83	74	-9.27	34.5	8.44	34.04	140	353	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5020	43.12	34.71	54	-10.88	34.41	7.97	33.97	137	34	Average
5020	57.46	49.05	74	-16.54	34.41	7.97	33.97	137	34	Peak
5260	100.85	92.1			34.5	8.26	34.01	137	34	Average
5260	108.64	99.89			34.5	8.26	34.01	137	34	Peak
5460	43.52	34.56	54	-10.48	34.5	8.51	34.05	137	34	Average
5460	57.73	48.77	74	-16.27	34.5	8.51	34.05	137	34	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	43.07	34.63	54	-10.93	34.42	8	33.98	112	316	Average
5046	57.24	48.8	74	-16.76	34.42	8	33.98	112	316	Peak
5260	98.64	89.89			34.5	8.26	34.01	112	316	Average
5260	105.64	96.89			34.5	8.26	34.01	112	316	Peak
5406	43.16	34.26	54	-10.84	34.5	8.44	34.04	112	316	Average
5406	56.95	48.05	74	-17.05	34.5	8.44	34.04	112	316	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	43.1	34.69	54	-10.9	34.41	7.97	33.97	149	39	Average
5024	57.72	49.31	74	-16.28	34.41	7.97	33.97	149	39	Peak
5300	101.32	92.52			34.5	8.32	34.02	149	39	Average
5300	108.79	99.99			34.5	8.32	34.02	149	39	Peak
5352	43.42	34.57	54	-10.58	34.5	8.38	34.03	149	39	Average
5352	58.51	49.66	74	-15.49	34.5	8.38	34.03	149	39	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5042	43.03	34.59	54	-10.97	34.42	8	33.98	112	315	Average
5042	58.01	49.57	74	-15.99	34.42	8	33.98	112	315	Peak
5300	98.92	90.12			34.5	8.32	34.02	112	315	Average
5300	105.25	96.45			34.5	8.32	34.02	112	315	Peak
5424	43.39	34.45	54	-10.61	34.5	8.48	34.04	112	315	Average
5424	57.41	48.47	74	-16.59	34.5	8.48	34.04	112	315	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5300MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5112	43.32	34.76	54	-10.68	34.45	8.1	33.99	149	34	Average
5112	58.23	49.67	74	-15.77	34.45	8.1	33.99	149	34	Peak
5320	100.55	91.72			34.5	8.35	34.02	149	34	Average
5320	108.12	99.29			34.5	8.35	34.02	149	34	Peak
5350	47.99	39.14	54	-6.01	34.5	8.38	34.03	149	34	Average
5350	63.33	54.48	74	-10.67	34.5	8.38	34.03	149	34	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	43.06	34.5	54	-10.94	34.45	8.1	33.99	128	342	Average
5110	58.08	49.52	74	-15.92	34.45	8.1	33.99	128	342	Peak
5320	99.26	90.43			34.5	8.35	34.02	128	342	Average
5320	106.72	97.89			34.5	8.35	34.02	128	342	Peak
5348	46.72	37.87	54	-7.28	34.5	8.38	34.03	128	342	Average
5348	63.44	54.59	74	-10.56	34.5	8.38	34.03	128	342	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5446	48.83	39.86	54	-5.17	34.5	8.51	34.04	100	120	Average
5446	59.53	50.56	74	-14.47	34.5	8.51	34.04	100	120	Peak
5470	61.81	52.85	68.3	-6.49	34.5	8.51	34.05	100	120	Peak
5500	100.6	91.58			34.5	8.57	34.05	100	120	Average
5500	107.29	98.27			34.5	8.57	34.05	100	120	Peak
5725	57.14	47.93	68.3	-11.16	34.67	8.65	34.11	100	120	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.38	37.42	54	-7.62	34.5	8.51	34.05	102	90	Average
5460	58.24	49.28	74	-15.76	34.5	8.51	34.05	102	90	Peak
5470	60.62	51.66	68.3	-7.68	34.5	8.51	34.05	102	90	Peak
5500	97.88	88.86			34.5	8.57	34.05	102	90	Average
5500	105.09	96.07			34.5	8.57	34.05	102	90	Peak
5725	56.2	46.99	68.3	-12.1	34.67	8.65	34.11	102	90	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5398	43.09	34.19	54	-10.91	34.5	8.44	34.04	100	118	Average
5398	58.08	49.18	74	-15.92	34.5	8.44	34.04	100	118	Peak
5470	56.78	47.82	68.3	-11.52	34.5	8.51	34.05	100	118	Peak
5580	99.19	90.1			34.57	8.6	34.08	100	118	Average
5580	107.62	98.53			34.57	8.6	34.08	100	118	Peak
5725	57.21	48	68.3	-11.09	34.67	8.65	34.11	100	118	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5430	43.29	34.35	54	-10.71	34.5	8.48	34.04	101	86	Average
5430	57.89	48.95	74	-16.11	34.5	8.48	34.04	101	86	Peak
5470	57.36	48.4	68.3	-10.94	34.5	8.51	34.05	101	86	Peak
5580	97.47	88.38			34.57	8.6	34.08	101	86	Average
5580	104.81	95.72			34.57	8.6	34.08	101	86	Peak
5725	56.93	47.72	68.3	-11.37	34.67	8.65	34.11	101	86	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.45	34.49	54	-10.55	34.5	8.51	34.05	100	141	Average
5460	57.9	48.94	74	-16.1	34.5	8.51	34.05	100	141	Peak
5470	56.96	48	68.3	-11.34	34.5	8.51	34.05	100	141	Peak
5700	97.92	88.72			34.66	8.64	34.1	100	141	Average
5700	105.72	96.52			34.66	8.64	34.1	100	141	Peak
5725	59.94	50.73	68.3	-8.36	34.67	8.65	34.11	100	141	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.55	34.59	54	-10.45	34.5	8.51	34.05	182	267	Average
5460	58.23	49.27	74	-15.77	34.5	8.51	34.05	182	267	Peak
5470	56.88	47.92	68.3	-11.42	34.5	8.51	34.05	182	267	Peak
5700	95.29	86.09			34.66	8.64	34.1	182	267	Average
5700	102.07	92.87			34.66	8.64	34.1	182	267	Peak
5725	58.09	48.88	68.3	-10.21	34.67	8.65	34.11	182	267	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	48.93	40.34	54	-5.07	34.46	8.13	34	157	71	Average
5148	65.19	56.6	74	-8.81	34.46	8.13	34	157	71	Peak
5180	100.6	91.97			34.47	8.16	34	157	71	Average
5180	107.65	99.02			34.47	8.16	34	157	71	Peak
5424	42.26	33.32	54	-11.74	34.5	8.48	34.04	157	71	Average
5424	63.82	54.88	74	-10.18	34.5	8.48	34.04	157	71	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5012	47.7	39.29	54	-6.3	34.41	7.97	33.97	127	351	Average
5012	63.43	55.02	74	-10.57	34.41	7.97	33.97	127	351	Peak
5180	98.37	89.74			34.47	8.16	34	127	351	Average
5180	106.64	98.01			34.47	8.16	34	127	351	Peak
5384	42.16	33.29	54	-11.84	34.5	8.41	34.04	127	351	Average
5384	63.67	54.8	74	-10.33	34.5	8.41	34.04	127	351	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5030	42.42	33.98	54	-11.58	34.41	8	33.97	156	70	Average
5030	62.86	54.42	74	-11.14	34.41	8	33.97	156	70	Peak
5220	101.15	92.44			34.49	8.22	34	156	70	Average
5220	107.96	99.25			34.49	8.22	34	156	70	Peak
5460	42.33	33.37	54	-11.67	34.5	8.51	34.05	156	70	Average
5460	64.23	55.27	74	-9.77	34.5	8.51	34.05	156	70	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5068	42.38	33.9	54	-11.62	34.43	8.03	33.98	113	352	Average
5068	63.63	55.15	74	-10.37	34.43	8.03	33.98	113	352	Peak
5220	98.85	90.14			34.49	8.22	34	113	352	Average
5220	106.27	97.56			34.49	8.22	34	113	352	Peak
5442	42.23	33.29	54	-11.77	34.5	8.48	34.04	113	352	Average
5442	62.81	53.87	74	-11.19	34.5	8.48	34.04	113	352	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5220MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5056	42.47	33.99	54	-11.53	34.43	8.03	33.98	154	70	Average
5056	64.01	55.53	74	-9.99	34.43	8.03	33.98	154	70	Peak
5240	101.47	92.73			34.49	8.26	34.01	154	70	Average
5240	109.87	101.13			34.49	8.26	34.01	154	70	Peak
5460	42.25	33.29	54	-11.75	34.5	8.51	34.05	154	70	Average
5460	64.48	55.52	74	-9.52	34.5	8.51	34.05	154	70	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5070	42.34	33.86	54	-11.66	34.43	8.03	33.98	126	354	Average
5070	63.66	55.18	74	-10.34	34.43	8.03	33.98	126	354	Peak
5240	99.28	90.54			34.49	8.26	34.01	126	354	Average
5240	107.09	98.35			34.49	8.26	34.01	126	354	Peak
5366	42.14	33.29	54	-11.86	34.5	8.38	34.03	126	354	Average
5366	63.58	54.73	74	-10.42	34.5	8.38	34.03	126	354	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	43.14	34.55	54	-10.86	34.46	8.13	34	138	34	Average
5148	57.58	48.99	74	-16.42	34.46	8.13	34	138	34	Peak
5260	100.81	92.06			34.5	8.26	34.01	138	34	Average
5260	108.07	99.32			34.5	8.26	34.01	138	34	Peak
5460	43.38	34.42	54	-10.62	34.5	8.51	34.05	138	34	Average
5460	57.33	48.37	74	-16.67	34.5	8.51	34.05	138	34	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5132	43.19	34.63	54	-10.81	34.45	8.1	33.99	112	314	Average
5132	57.07	48.51	74	-16.93	34.45	8.1	33.99	112	314	Peak
5260	98.47	89.72			34.5	8.26	34.01	112	314	Average
5260	105.46	96.71			34.5	8.26	34.01	112	314	Peak
5428	43.25	34.31	54	-10.75	34.5	8.48	34.04	112	314	Average
5428	57.88	48.94	74	-16.12	34.5	8.48	34.04	112	314	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5036	43.18	34.74	54	-10.82	34.41	8	33.97	151	41	Average
5036	57.13	48.69	74	-16.87	34.41	8	33.97	151	41	Peak
5300	100.96	92.16			34.5	8.32	34.02	151	41	Average
5300	108.41	99.61			34.5	8.32	34.02	151	41	Peak
5452	43.67	34.71	54	-10.33	34.5	8.51	34.05	151	41	Average
5452	57.18	48.22	74	-16.82	34.5	8.51	34.05	151	41	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5092	43.26	34.73	54	-10.74	34.44	8.07	33.98	129	343	Average
5092	57.15	48.62	74	-16.85	34.44	8.07	33.98	129	343	Peak
5300	98.87	90.07			34.5	8.32	34.02	129	343	Average
5300	105.96	97.16			34.5	8.32	34.02	129	343	Peak
5352	43.5	34.65	54	-10.5	34.5	8.38	34.03	129	343	Average
5352	57.81	48.96	74	-16.19	34.5	8.38	34.03	129	343	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5300MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5076	43.28	34.8	54	-10.72	34.43	8.03	33.98	136	52	Average
5076	57.7	49.22	74	-16.3	34.43	8.03	33.98	136	52	Peak
5320	100.64	91.81			34.5	8.35	34.02	136	52	Average
5320	108.22	99.39			34.5	8.35	34.02	136	52	Peak
5348	46.78	37.93	54	-7.22	34.5	8.38	34.03	136	52	Average
5348	62.62	53.77	74	-11.38	34.5	8.38	34.03	136	52	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5094	43.18	34.66	54	-10.82	34.44	8.07	33.99	128	344	Average
5094	57.66	49.14	74	-16.34	34.44	8.07	33.99	128	344	Peak
5320	99.17	90.34			34.5	8.35	34.02	128	344	Average
5320	106.03	97.2			34.5	8.35	34.02	128	344	Peak
5348	46.76	37.91	54	-7.24	34.5	8.38	34.03	128	344	Average
5348	62.35	53.5	74	-11.65	34.5	8.38	34.03	128	344	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	49.01	40.04	54	-4.99	34.5	8.51	34.04	100	122	Average
5448	59.08	50.11	74	-14.92	34.5	8.51	34.04	100	122	Peak
5470	61.07	52.11	68.3	-7.23	34.5	8.51	34.05	100	122	Peak
5500	100.39	91.37			34.5	8.57	34.05	100	122	Average
5500	107.25	98.23			34.5	8.57	34.05	100	122	Peak
5725	56.89	47.68	68.3	-11.41	34.67	8.65	34.11	100	122	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5452	47.23	38.27	54	-6.77	34.5	8.51	34.05	100	2	Average
5452	57.58	48.62	74	-16.42	34.5	8.51	34.05	100	2	Peak
5470	61.31	52.35	68.3	-6.99	34.5	8.51	34.05	100	2	Peak
5500	98.05	89.03			34.5	8.57	34.05	100	2	Average
5500	104.8	95.78			34.5	8.57	34.05	100	2	Peak
5725	55.38	46.17	68.3	-12.92	34.67	8.65	34.11	100	2	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	43.72	34.76	54	-10.28	34.5	8.51	34.05	143	119	Average
5458	57.46	48.5	74	-16.54	34.5	8.51	34.05	143	119	Peak
5470	55.95	46.99	68.3	-12.35	34.5	8.51	34.05	143	119	Peak
5580	96.39	87.3			34.57	8.6	34.08	143	119	Average
5580	106.44	97.35			34.57	8.6	34.08	143	119	Peak
5725	55.49	46.28	68.3	-12.81	34.67	8.65	34.11	143	119	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5364	43.7	34.85	54	-10.3	34.5	8.38	34.03	186	317	Average
5364	57.61	48.76	74	-16.39	34.5	8.38	34.03	186	317	Peak
5470	57.37	48.41	68.3	-10.93	34.5	8.51	34.05	186	317	Peak
5580	95.39	86.3			34.57	8.6	34.08	186	317	Average
5580	103.96	94.87			34.57	8.6	34.08	186	317	Peak
5725	56.4	47.19	68.3	-11.9	34.67	8.65	34.11	186	317	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5372	43.66	34.78	54	-10.34	34.5	8.41	34.03	102	82	Average
5372	59.11	50.23	74	-14.89	34.5	8.41	34.03	102	82	Peak
5470	58.34	49.38	68.3	-9.96	34.5	8.51	34.05	102	82	Peak
5700	97.28	88.08			34.66	8.64	34.1	102	82	Average
5700	105.18	95.98			34.66	8.64	34.1	102	82	Peak
5725	61.44	52.23	68.3	-6.86	34.67	8.65	34.11	102	82	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	43.62	34.66	54	-10.38	34.5	8.51	34.05	105	349	Average
5458	57.74	48.78	74	-16.26	34.5	8.51	34.05	105	349	Peak
5470	55.43	46.47	68.3	-12.87	34.5	8.51	34.05	105	349	Peak
5700	95.03	85.83			34.66	8.64	34.1	105	349	Average
5700	103.39	94.19			34.66	8.64	34.1	105	349	Peak
5725	59.72	50.51	68.3	-8.58	34.67	8.65	34.11	105	349	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	50.72	42.13	54	-3.28	34.46	8.13	34	157	71	Average
5150	65.06	56.47	74	-8.94	34.46	8.13	34	157	71	Peak
5190	96.72	88.06			34.47	8.19	34	157	71	Average
5190	103.98	95.32			34.47	8.19	34	157	71	Peak
5416	43.49	34.59	54	-10.51	34.5	8.44	34.04	157	71	Average
5416	63	54.1	74	-11	34.5	8.44	34.04	157	71	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	46.32	37.73	54	-7.68	34.46	8.13	34	126	350	Average
5150	63.76	55.17	74	-10.24	34.46	8.13	34	126	350	Peak
5190	94.61	85.95			34.47	8.19	34	126	350	Average
5190	101.44	92.78			34.47	8.19	34	126	350	Peak
5446	43.5	34.53	54	-10.5	34.5	8.51	34.04	126	350	Average
5446	64.66	55.69	74	-9.34	34.5	8.51	34.04	126	350	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5190MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5040	43.53	35.08	54	-10.47	34.42	8	33.97	155	70	Average
5040	63.27	54.82	74	-10.73	34.42	8	33.97	155	70	Peak
5230	95.47	86.77			34.49	8.22	34.01	155	70	Average
5230	102.24	93.54			34.49	8.22	34.01	155	70	Peak
5420	42.28	33.34	54	-11.72	34.5	8.48	34.04	155	70	Average
5420	63.13	54.19	74	-10.87	34.5	8.48	34.04	155	70	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	44.24	35.65	54	-9.76	34.45	8.13	33.99	113	353	Average
5140	63.47	54.88	74	-10.53	34.45	8.13	33.99	113	353	Peak
5230	92.81	84.11			34.49	8.22	34.01	113	353	Average
5230	100.34	91.64			34.49	8.22	34.01	113	353	Peak
5378	43.46	34.59	54	-10.54	34.5	8.41	34.04	113	353	Average
5378	63.5	54.63	74	-10.5	34.5	8.41	34.04	113	353	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5230MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	43.23	34.63	54	-10.77	34.46	8.13	33.99	151	34	Average
5142	58.61	50.01	74	-15.39	34.46	8.13	33.99	151	34	Peak
5270	95.16	86.38			34.5	8.29	34.01	151	34	Average
5270	103.67	94.89			34.5	8.29	34.01	151	34	Peak
5456	43.68	34.72	54	-10.32	34.5	8.51	34.05	151	34	Average
5456	58.06	49.1	74	-15.94	34.5	8.51	34.05	151	34	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5108	43.79	35.23	54	-10.21	34.45	8.1	33.99	111	315	Average
5108	57.17	48.61	74	-16.83	34.45	8.1	33.99	111	315	Peak
5270	93.9	85.12			34.5	8.29	34.01	111	315	Average
5270	101.26	92.48			34.5	8.29	34.01	111	315	Peak
5442	43.55	34.61	54	-10.45	34.5	8.48	34.04	111	315	Average
5442	57.72	48.78	74	-16.28	34.5	8.48	34.04	111	315	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5270MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5108	43.14	34.58	54	-10.86	34.45	8.1	33.99	136	32	Average
5108	57.35	48.79	74	-16.65	34.45	8.1	33.99	136	32	Peak
5310	95.31	86.51			34.5	8.32	34.02	136	32	Average
5310	103.06	94.26			34.5	8.32	34.02	136	32	Peak
5350	45.96	37.11	54	-8.04	34.5	8.38	34.03	136	32	Average
5350	62.88	54.03	74	-11.12	34.5	8.38	34.03	136	32	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5118	43.19	34.63	54	-10.81	34.45	8.1	33.99	128	344	Average
5118	57.72	49.16	74	-16.28	34.45	8.1	33.99	128	344	Peak
5310	93.17	84.37			34.5	8.32	34.02	128	344	Average
5310	101.01	92.21			34.5	8.32	34.02	128	344	Peak
5352	45.71	36.86	54	-8.29	34.5	8.38	34.03	128	344	Average
5352	60.05	51.2	74	-13.95	34.5	8.38	34.03	128	344	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5310MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.87	34.91	54	-10.13	34.5	8.51	34.05	101	119	Average
5460	61.43	52.47	74	-12.57	34.5	8.51	34.05	101	119	Peak
5470	59.46	50.5	68.3	-8.84	34.5	8.51	34.05	101	119	Peak
5510	93.19	84.17			34.51	8.57	34.06	101	119	Average
5510	100.09	91.07			34.51	8.57	34.06	101	119	Peak
5725	55.73	46.52	68.3	-12.57	34.67	8.65	34.11	101	119	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.21	34.25	54	-10.79	34.5	8.51	34.05	148	337	Average
5460	58.82	49.86	74	-15.18	34.5	8.51	34.05	148	337	Peak
5470	57.74	48.78	68.3	-10.56	34.5	8.51	34.05	148	337	Peak
5510	91.18	82.16			34.51	8.57	34.06	148	337	Average
5510	98.99	89.97			34.51	8.57	34.06	148	337	Peak
5725	54.8	45.59	68.3	-13.5	34.67	8.65	34.11	148	337	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5510MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	43.74	34.78	54	-10.26	34.5	8.51	34.05	144	118	Average
5458	58.38	49.42	74	-15.62	34.5	8.51	34.05	144	118	Peak
5470	58.4	49.44	68.3	-9.9	34.5	8.51	34.05	144	118	Peak
5550	92.83	83.77			34.54	8.59	34.07	144	118	Average
5550	99.97	90.91			34.54	8.59	34.07	144	118	Peak
5725	55.68	46.47	68.3	-12.62	34.67	8.65	34.11	144	118	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	43.57	34.6	54	-10.43	34.5	8.51	34.04	147	339	Average
5448	57.81	48.84	74	-16.19	34.5	8.51	34.04	147	339	Peak
5470	58.58	49.62	68.3	-9.72	34.5	8.51	34.05	147	339	Peak
5550	90.62	81.56			34.54	8.59	34.07	147	339	Average
5550	97.87	88.81			34.54	8.59	34.07	147	339	Peak
5725	56.24	47.03	68.3	-12.06	34.67	8.65	34.11	147	339	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5550MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	43.26	34.29	54	-10.74	34.5	8.51	34.04	100	119	Average
5448	57.66	48.69	74	-16.34	34.5	8.51	34.04	100	119	Peak
5470	57.77	48.81	68.3	-10.53	34.5	8.51	34.05	100	119	Peak
5670	91.75	82.59			34.63	8.63	34.1	100	119	Average
5670	99.21	90.05			34.63	8.63	34.1	100	119	Peak
5725	57.12	47.91	68.3	-11.18	34.67	8.65	34.11	100	119	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	43.39	34.43	54	-10.61	34.5	8.51	34.05	101	31	Average
5454	58.6	49.64	74	-15.4	34.5	8.51	34.05	101	31	Peak
5470	56.91	47.95	68.3	-11.39	34.5	8.51	34.05	101	31	Peak
5670	90.14	80.98			34.63	8.63	34.1	101	31	Average
5670	97.11	87.95			34.63	8.63	34.1	101	31	Peak
5725	57.1	47.89	68.3	-11.2	34.67	8.65	34.11	101	31	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5670MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	52.27	43.68	54	-1.73	34.46	8.13	34	156	70	Average
5148	67.64	59.05	74	-6.36	34.46	8.13	34	156	70	Peak
5210	95.19	86.51			34.49	8.19	34	156	70	Average
5210	101.23	92.55			34.49	8.19	34	156	70	Peak
5390	44.38	35.51	54	-9.62	34.5	8.41	34.04	156	70	Average
5390	59.7	50.83	74	-14.3	34.5	8.41	34.04	156	70	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	50.92	42.33	54	-3.08	34.46	8.13	34	126	349	Average
5148	65.83	57.24	74	-8.17	34.46	8.13	34	126	349	Peak
5210	92.18	83.5			34.49	8.19	34	126	349	Average
5210	98.45	89.77			34.49	8.19	34	126	349	Peak
5448	44.41	35.44	54	-9.59	34.5	8.51	34.04	126	349	Average
5448	59.84	50.87	74	-14.16	34.5	8.51	34.04	126	349	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5210MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5090	44.5	35.97	54	-9.5	34.44	8.07	33.98	137	34	Average
5090	57.65	49.12	74	-16.35	34.44	8.07	33.98	137	34	Peak
5290	93.17	84.37			34.5	8.32	34.02	137	34	Average
5290	100.56	91.76			34.5	8.32	34.02	137	34	Peak
5370	47.47	38.59	54	-6.53	34.5	8.41	34.03	137	34	Average
5370	61.27	52.39	74	-12.73	34.5	8.41	34.03	137	34	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5064	44.33	35.85	54	-9.67	34.43	8.03	33.98	111	315	Average
5064	57.67	49.19	74	-16.33	34.43	8.03	33.98	111	315	Peak
5290	91.5	82.7			34.5	8.32	34.02	111	315	Average
5290	98.76	89.96			34.5	8.32	34.02	111	315	Peak
5358	46.61	37.76	54	-7.39	34.5	8.38	34.03	111	315	Average
5358	58.77	49.92	74	-15.23	34.5	8.38	34.03	111	315	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5290MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	47.88	38.92	54	-6.12	34.5	8.51	34.05	102	119	Average
5456	62.58	53.62	74	-11.42	34.5	8.51	34.05	102	119	Peak
5470	64.88	55.92	68.3	-3.42	34.5	8.51	34.05	102	119	Peak
5530	91.3	82.26			34.53	8.58	34.07	102	119	Average
5530	98.72	89.68			34.53	8.58	34.07	102	119	Peak
5725	57.89	48.68	68.3	-10.41	34.67	8.65	34.11	102	119	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	48.65	39.69	54	-5.35	34.5	8.51	34.05	147	339	Average
5456	60.82	51.86	74	-13.18	34.5	8.51	34.05	147	339	Peak
5470	62.13	53.17	68.3	-6.17	34.5	8.51	34.05	147	339	Peak
5530	90.97	81.93			34.53	8.58	34.07	147	339	Average
5530	97.01	87.97			34.53	8.58	34.07	147	339	Peak
5725	55.45	46.24	68.3	-12.85	34.67	8.65	34.11	147	339	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5530MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA :

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	22.25	34.75	40	-17.75	19.02	0.74	32.26	100	221	Peak
58.08	24.95	46.56	40	-15.05	9.72	0.9	32.23	100	124	Peak
145.83	29.23	47.3	43.5	-14.27	12.82	1.38	32.27	102	74	Peak
399.4	18.77	30.25	46	-27.23	18.4	2.34	32.22	100	112	Peak
589.8	21.87	29.84	46	-24.13	21.35	2.87	32.19	100	221	Peak
771.1	25.22	30.79	46	-20.78	23.27	3.27	32.11	133	221	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.08	31.57	44.3	40	-8.43	18.79	0.74	32.26	100	221	Peak
63.21	31.87	52.86	40	-8.13	10.34	0.9	32.23	100	198	Peak
145.02	25.14	43.29	43.5	-18.36	12.74	1.38	32.27	100	252	Peak
477.8	19.87	29.62	46	-26.13	19.81	2.56	32.12	100	122	Peak
541.5	21.78	30.3	46	-24.22	20.9	2.76	32.18	133	211	Peak
755.7	24.74	30.53	46	-21.26	23.13	3.22	32.14	100	166	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.54	20.94	33.32	40	-19.06	19.14	0.74	32.26	100	155	Peak
58.89	25.01	46.66	40	-14.99	9.68	0.9	32.23	123	147	Peak
146.91	28.88	46.74	43.5	-14.62	12.89	1.52	32.27	102	252	Peak
423.2	19.13	30.21	46	-26.87	18.7	2.41	32.19	100	174	Peak
517	21.7	30.3	46	-24.3	20.83	2.7	32.13	111	333	Peak
690.6	24.34	30.48	46	-21.66	22.91	3.05	32.1	133	252	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.35	29.21	42.05	40	-10.79	18.68	0.74	32.26	107	45	Peak
63.75	31.74	52.57	40	-8.26	10.5	0.9	32.23	210	155	Peak
145.02	24.8	42.95	43.5	-18.7	12.74	1.38	32.27	211	169	Peak
356	17.39	29.82	46	-28.61	17.4	2.26	32.09	100	285	Peak
528.9	21.89	30.18	46	-24.11	21.17	2.7	32.16	222	321	Peak
697.6	24.17	29.95	46	-21.83	23.2	3.11	32.09	152	210	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
58.89	23.7	45.35	40	-16.3	9.68	0.9	32.23	100	331	Peak
146.91	29.19	47.05	43.5	-14.31	12.89	1.52	32.27	185	54	Peak
209.28	27.12	44.19	43.5	-16.38	13.54	1.65	32.26	100	321	Peak
414.8	19.57	30.77	46	-26.43	18.59	2.41	32.2	168	45	Peak
607.3	22.64	30.16	46	-23.36	21.8	2.87	32.19	133	225	Peak
786.5	24.9	30.31	46	-21.1	23.4	3.27	32.08	122	221	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.08	27.51	40.24	40	-12.49	18.79	0.74	32.26	102	252	Peak
63.75	30.41	51.24	40	-9.59	10.5	0.9	32.23	127	122	Peak
146.1	24.14	42.21	43.5	-19.36	12.82	1.38	32.27	123	322	Peak
425.3	19.13	30.23	46	-26.87	18.67	2.41	32.18	100	199	Peak
540.1	22.19	30.71	46	-23.81	20.9	2.76	32.18	111	121	Peak
676.6	24	30.73	46	-22	22.34	3.05	32.12	140	174	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2013	Jul. 01, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

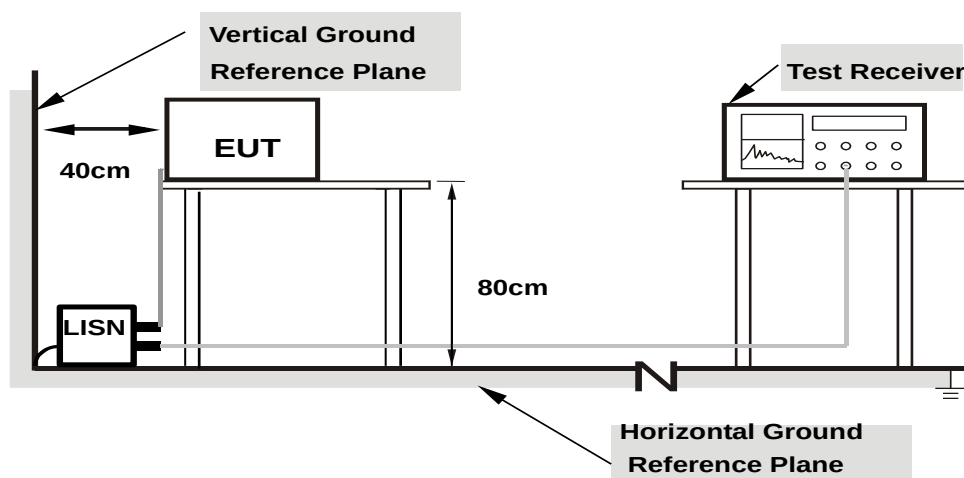
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

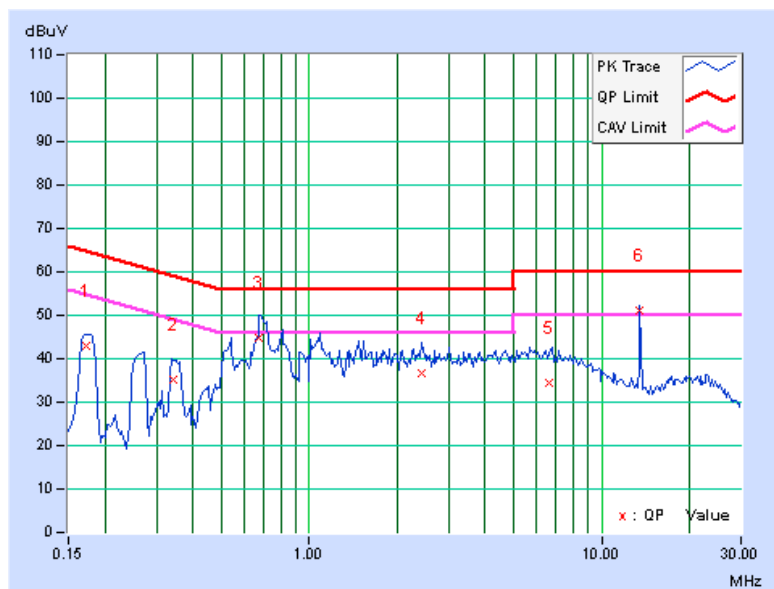
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA :

PHASE		Line 1			6dB BANDWIDTH			9kHz		
No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.17	42.80	35.44	42.97	35.61	64.79	54.79	-21.82	-19.18
2	0.34141	0.20	34.90	24.87	35.10	25.07	59.17	49.17	-24.07	-24.10
3	0.67344	0.24	44.44	28.81	44.68	29.05	56.00	46.00	-11.32	-16.95
4	2.43359	0.30	36.53	25.26	36.83	25.56	56.00	46.00	-19.17	-20.44
5	6.65625	0.40	34.10	23.67	34.50	24.07	60.00	50.00	-25.50	-25.93
6	13.55859	0.50	50.78	47.62	51.28	48.12	60.00	50.00	-8.72	-1.88

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

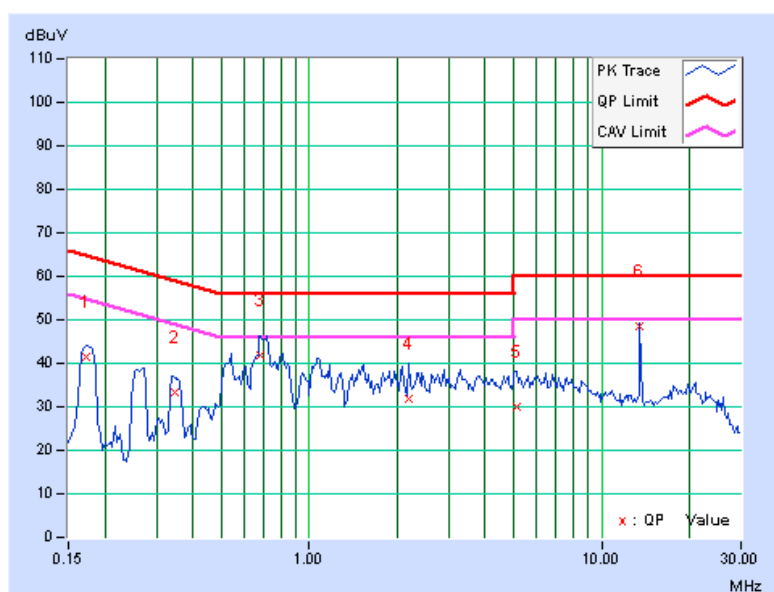


PHASE	Line 2	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.18	41.38	35.58	41.56	35.76	64.79	54.79	-23.23	-19.03
2	0.34531	0.23	33.25	27.27	33.48	27.50	59.07	49.07	-25.59	-21.57
3	0.68125	0.24	41.49	31.23	41.73	31.47	56.00	46.00	-14.27	-14.53
4	2.19141	0.29	31.48	22.72	31.77	23.01	56.00	46.00	-24.23	-22.99
5	5.12891	0.41	29.74	23.43	30.15	23.84	60.00	50.00	-29.85	-26.16
6	13.55859	0.57	48.06	43.09	48.63	43.66	60.00	50.00	-11.37	-6.34

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.3 PEAK TRANSMIT POWER MEASUREMENT

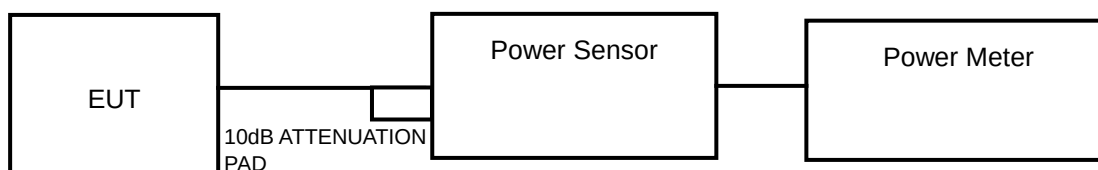
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

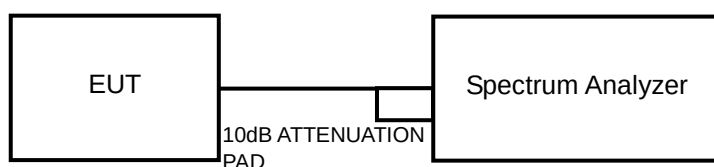
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

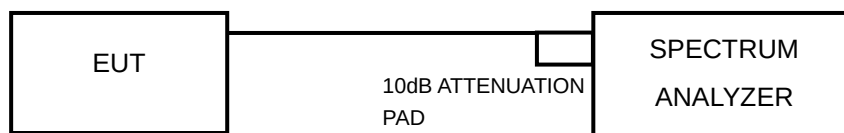
FOR POWER OUTPUT MEASUREMENT



or



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

<802.11a, 802.11n (20MHz), 802.11n (40MHz)>

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is added to measured value.

<802.11 ac (80MHz)>

Method SA-1 is used to perform output power measurement, trigger and gating function of spectrum analyzer is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	38.459	15.85	17	PASS
44	5220	39.174	15.93	17	PASS
48	5240	41.020	16.13	17	PASS
52	5260	41.495	16.18	24	PASS
60	5300	43.551	16.39	24	PASS
64	5320	44.361	16.47	24	PASS
100	5500	44.463	16.48	24	PASS
116	5580	43.351	16.37	24	PASS
140	5700	40.551	16.08	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	39.355	15.95	17	PASS
44	5220	42.560	16.29	17	PASS
48	5240	41.783	16.21	17	PASS
52	5260	42.560	16.29	24	PASS
60	5300	43.853	16.42	24	PASS
64	5320	44.259	16.46	24	PASS
100	5500	43.351	16.37	24	PASS
116	5580	41.591	16.19	24	PASS
140	5700	40.926	16.12	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	18.493	12.67	17	PASS
46	5230	19.231	12.84	17	PASS
54	5270	20.512	13.12	24	PASS
62	5310	22.182	13.46	24	PASS
102	5510	21.038	13.23	24	PASS
110	5550	20.559	13.13	24	PASS
134	5670	20.512	13.12	24	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	23.659	13.74	17	PASS
58	5290	22.542	13.53	24	PASS
106	5530	22.803	13.58	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	32.58	PASS
44	5220	31.61	PASS
48	5240	32.14	PASS
52	5260	32.46	PASS
60	5300	32.67	PASS
64	5320	32.62	PASS
100	5500	32.19	PASS
116	5580	32.28	PASS
140	5700	33.68	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	32.82	PASS
44	5220	33.52	PASS
48	5240	32.49	PASS
52	5260	33.21	PASS
60	5300	33.95	PASS
64	5320	32.66	PASS
100	5500	32.28	PASS
116	5580	31.87	PASS
140	5700	33.73	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.77	PASS
46	5230	66.10	PASS
54	5270	69.34	PASS
62	5310	69.63	PASS
102	5510	45.95	PASS
110	5550	65.49	PASS
134	5670	59.48	PASS



A D T

802.11ac (80MHz)

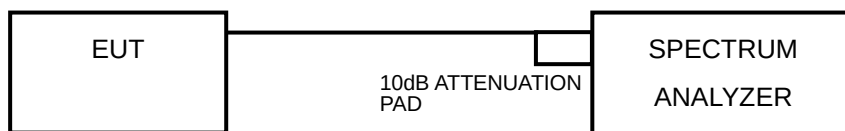
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	84.85	PASS
58	5290	86.05	PASS
106	5530	85.33	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

<802.11a, 802.11n (20MHz), 802.11n (40MHz), 802.11ac (80MHz)>

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- 3) Sweep time = 4second.
- 4) Perform a single sweep.
- 5) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.43	0.64	3.07	4	PASS
44	5220	2.69	0.64	3.33	4	PASS
48	5240	3.21	0.64	3.85	4	PASS
52	5260	2.95	0.64	3.59	11	PASS
60	5300	3.37	0.64	4.01	11	PASS
64	5320	3.96	0.64	4.60	11	PASS
100	5500	4.28	0.64	4.92	11	PASS
116	5580	3.95	0.64	4.59	11	PASS
140	5700	3.44	0.64	4.08	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.14	0.66	2.80	4	PASS
44	5220	2.44	0.66	3.10	4	PASS
48	5240	2.54	0.66	3.20	4	PASS
52	5260	2.73	0.66	3.39	11	PASS
60	5300	3.16	0.66	3.82	11	PASS
64	5320	3.29	0.66	3.95	11	PASS
100	5500	3.51	0.66	4.17	11	PASS
116	5580	3.22	0.66	3.88	11	PASS
140	5700	3.17	0.66	3.83	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-3.05	0.64	-2.41	4	PASS
46	5230	-3.07	0.64	-2.43	4	PASS
54	5270	-2.71	0.64	-2.07	11	PASS
62	5310	-2.06	0.64	-1.42	11	PASS
102	5510	-1.56	0.64	-0.92	11	PASS
110	5550	-2.05	0.64	-1.41	11	PASS
134	5670	-2.32	0.64	-1.68	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

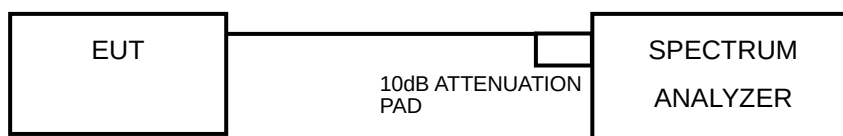
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-5.68	0.81	-4.87	4	PASS
58	5290	-5.99	0.81	-5.18	11	PASS
106	5530	-5.85	0.81	-5.04	11	PASS

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW $\geq$ 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

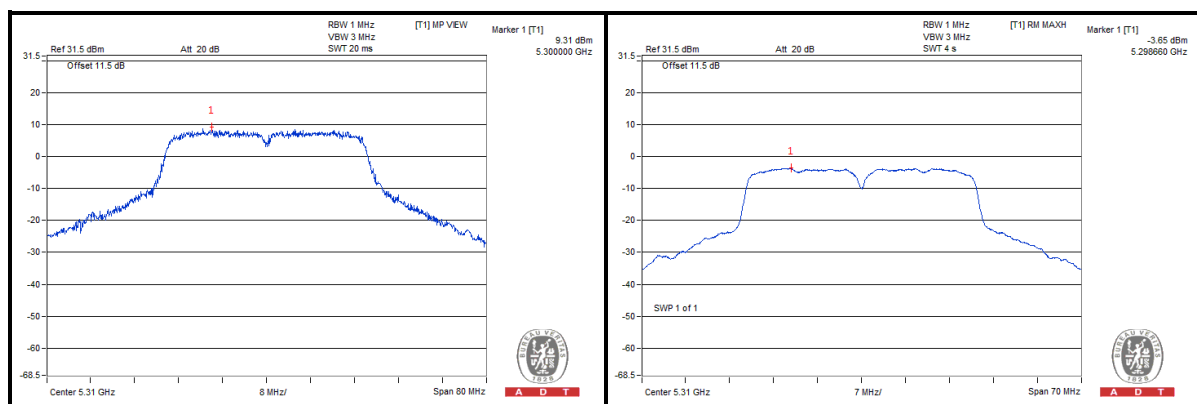
Same as 4.2.6

4.5.7 TEST RESULTS

802.11a

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5500	13.86	4.28	4.92	8.94	13	PASS
	QPSK		14.41	3.49	4.13	10.28	13	PASS
	16QAM		14.53	2.67	3.31	11.22	13	PASS
	64QAM		13.33	0.70	1.34	11.99	13	PASS
802.11n (20MHz)	BPSK	5320	14.28	3.29	3.95	10.33	13	PASS
	QPSK		13.34	3.08	3.74	9.60	13	PASS
	16QAM		13.96	1.60	2.26	11.70	13	PASS
	64QAM		13.15	0.55	1.21	11.94	13	PASS
802.11n (40MHz)	BPSK	5310	8.34	-2.06	-1.42	9.76	13	PASS
	QPSK		8.73	-2.24	-1.60	10.33	13	PASS
	16QAM		8.43	-2.85	-2.21	10.64	13	PASS
	64QAM		9.31	-3.65	-3.01	12.32	13	PASS
802.11ac (80MHz)	BPSK	5210	3.17	-5.68	-4.87	8.04	13	PASS
	QPSK		2.70	-5.88	-5.07	7.77	13	PASS
	16QAM		2.42	-5.58	-4.77	7.19	13	PASS
	64QAM		2.70	-5.55	-4.74	7.44	13	PASS
	256QAM		1.18	-7.81	-7.00	8.18	13	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

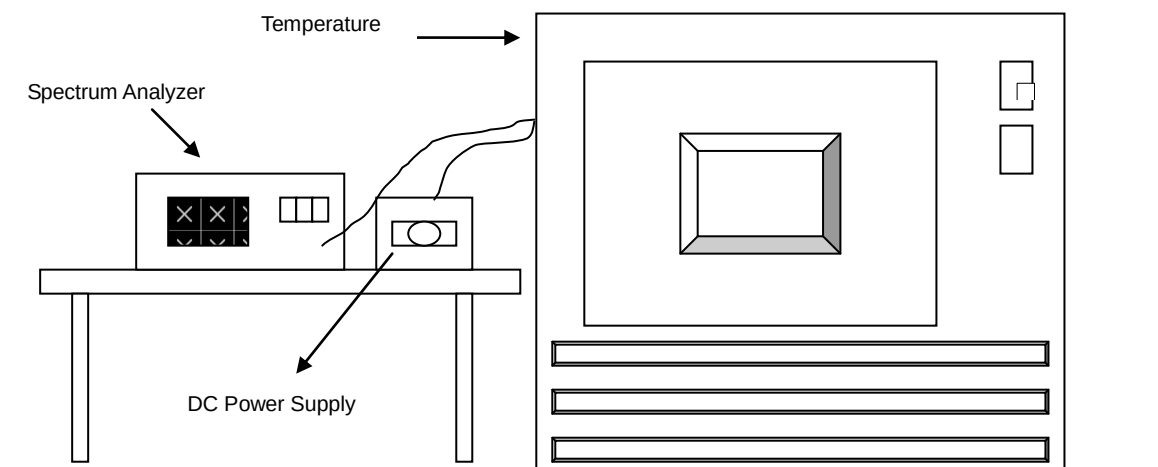


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

- a. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- b. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
- c. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
60	3.8	5320.015247	2.866	5320.015018	2.823	5320.015465	2.907	5320.015306	2.877
50	3.8	5320.015862	2.982	5320.015659	2.943	5320.016012	3.010	5320.015988	3.005
40	3.8	5320.017426	3.276	5320.017211	3.235	5320.017246	3.242	5320.016899	3.177
30	3.8	5320.017993	3.382	5320.018198	3.421	5320.018343	3.448	5320.017627	3.313
20	3.8	5320.019633	3.690	5320.019628	3.689	5320.019480	3.662	5320.019369	3.641
10	3.8	5320.017863	3.358	5320.018066	3.396	5320.018247	3.430	5320.018057	3.394
0	3.8	5320.016990	3.194	5320.016590	3.118	5320.016888	3.174	5320.016747	3.148
-10	3.8	5320.016015	3.010	5320.016386	3.080	5320.016305	3.065	5320.016129	3.032
-20	3.8	5320.014930	2.806	5320.014821	2.786	5320.015297	2.875	5320.014895	2.800
-30	3.8	5320.015310	2.878	5320.015780	2.966	5320.016190	3.043	5320.016120	3.030

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.55	5320.018056	3.394	5320.018145	3.411	5320.017491	3.288	5320.017963	3.377
	3.8	5320.017993	3.382	5320.018198	3.421	5320.018343	3.448	5320.017627	3.313
	4.35	5320.019447	3.655	5320.019671	3.698	5320.018918	3.556	5320.019228	3.614

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---